

CLAIMS

1/ A method of densifying porous substrates of hollow shape by chemical vapor infiltration at pressure equilibrium, the method comprising disposing at least one substrate in an enclosure and admitting a reactive gas into the enclosure, the method being characterized in that part of the reactive gas flow admitted into the enclosure is guided by tooling to the inside of the volume defined by the concave inside face of the or each hollow-shaped substrate so that said concave inside face is swept in full by a fraction of the total admitted gas flow.

2/ A method according to claim 1, characterized in that the reactive gas flow admitted into the enclosure is distributed towards each face of the or each substrate placed in the enclosure.

3/ A method according to claim 1 or claim 2, characterized in that the fraction of the total reactive gas flow sweeping over a face of the or each substrate placed in the enclosure is not less than 5%.

4/ A method according to claim 1 or claim 2, characterized in that the fraction of the total reactive gas flow sweeping over a face of the or each substrate placed in the enclosure is not less than 10%.

5/ A method according to any one of claims 1 to 4, characterized in that a plurality of substrates are densified simultaneously, the substrates being placed inside the enclosure in alignment in the general flow direction of the gas through the enclosure.

6/ A method according to any one of claims 1 to 5, characterized in that the guidance of a portion of the gas

flow is provided by a wall portion which penetrates part of the way into the volume defined by the concave inside face of the or each substrate.

5 7/ A method according to claim 6, characterized in that the gas flow is guided in part by a cylindrical wall portion to the vicinity of the end wall of the or each substrate.

10 8/ A method according to any one of claims 1 to 5, characterized in that the guidance of a portion of the gas flow is provided by passages formed through a body housed inside the volume defined by the concave inside face of the or each substrate.

15 9/ An installation for densifying hollow-shaped porous substrate by chemical vapor infiltration, the installation comprising an enclosure having a side wall and first and second end walls opposite each other, means for admitting a reactive gas opening out into the enclosure through the first end wall, means for evacuating effluent gas opening out into the enclosure through the second end wall, and at least one tray for supporting a substrate to be densified, the installation being characterized in that it further comprises means for distributing and guiding the gas flow so as to bring
20 a fraction of the admitted reactive gas flow to the location of each substrate within the enclosure and so as to guide a portion of the gas flow brought to said location to the inside of a volume defined by a concave inside face of a substrate disposed at said location.

30 10/ An installation according to claim 9, characterized in that the flow guide means comprise guide tooling constituted by a cylindrical wall portion disposed in such a manner as to penetrate at least in part into said substrate volume.

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11/ An installation according to claim 9, characterized in that the flow guide means comprise guide tooling constituted by a body presenting a plurality of through passages and disposed in such a manner as to penetrate at least in part into said substrate volume.

12/ An installation according to any one of claims 9 to 11, characterized in that the flow distribution means comprise one or more trays which are disposed transversely inside the enclosure and which define flow-distributing passages formed by openings made through the trays and by gaps left between the trays and a side wall of the enclosure.

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